

consequence of "extreme shortness of sight." He could read small type at a distance of three or four inches, but could not distinguish the features of persons a few feet off. He had tried various kinds of concave glasses without benefit. The eyes looked bright and healthy, the irides were very active, and there were no irregular movements of the globes. On looking attentively at the pupils, Mr. Dixon observed that they had not the deep blackness which might be expected in a lad of thirteen; and yet they could not be termed "gray" or "milky." Atropine was applied, and then, under concentrated light, each lens was seen to be faintly streaked throughout its whole extent with fine lines, except the extreme margin, which retained its transparency. The lad was to be employed in a counting-house, but his limited range of vision rendered the pursuance of such an occupation almost impracticable.

Keratomyxis was performed on the right eye March 12. By the 7th of May absorption of the lens was complete. A central opening was then made in the opaque capsule, to such an extent as to leave the pupil perfectly clear. The contractility of the iris and roundness of the pupil remained unimpaired.

The needle was used to the left eye on the 20th of August, and again about two months later. These two operations procured the entire absorption of the lens. The patient returned to the hospital early in the present year, and then the pupil was cleared of capsule by an operation similar to that which had been performed on the other eye, a mere ring of that membrane being left, which was completely hidden by the iris in the ordinary state of the pupil. With moderately convex glasses the lad is now able to go through the usual routine of a counting-house with perfect ease.—*Med. Times and Gaz.* June 18, 1853.

63. *Fluid Cataract—Puncture of Capsule, and immediate removal of the fluid from the anterior chamber.*—Mary Ann R., aged 22, applied at the hospital with cataract in the left eye. No defect of sight had been noticed till she was six or seven years old, at which time her mother observed "a speck" in the left pupil. Of late years this has been getting whiter and more evident. When she was brought to the hospital, in April, 1853, the appearance of the lens was milky, with a faint, bluish cast, and irregularly mottled with chalky-white patches. The iris was very active, and there was good perception of light. The right eye was in all respects healthy. Mr. Dixon expressed a belief, that the lens had undergone that gradual process of disintegration and softening which reduces a cataract to a fluid state. He performed keratomyxis on the 22d of April, and, as soon as the capsule was lacerated, its fluid contents escaped, and rendered the aqueous humour turbid. Mr. Dixon has recently published some remarks on the good effect of immediately evacuating the effused fluid in cases of this kind, as a means of preventing the distressing nausea and vomiting which occur when the fluid is allowed to remain in the anterior chamber.¹ This treatment was pursued in the present instance; a broad cutting-needle having been introduced through the cornea, at the spot whence the cataract-needle had been withdrawn, was rotated, so as to make the wound gape a little, and the whole of the liquefied lens ran out with the aqueous humour. Towards evening, the patient had a slight feeling of sickness, but this lasted for a short time only, and she slept well. In the morning, she had again a little nausea, which soon passed off, and did not return.

On May 20, Mr. Dixon tore up the capsule to such an extent as to leave the pupillary space perfectly free, and excellent vision has resulted.—*Med. Times and Gaz.* June 18, 1853.

64. *Cure of Squinting by the Use of Prismatic Spectacles.* By T. SPENCER WELLS, F.R.C.S.—Dr. KURKE, a Dutch physician, first recommended prismatic spectacles for the cure of squinting. He has recorded one case cured by their use in the Dutch journals. Dr. Von Gräfe, of Berlin, has since employed them very extensively. During a recent visit to Berlin, I had frequent opportunities

¹ The Lancet, Feb. 26, 1853.

of observing their effects upon his patients, and I think that the result of his experience should be made known to the profession in England.

The glasses are fitted in ordinary spectacle frames. They are simple prisms of various degrees, from 1 to 20. It would be possible to make them achromatic; but I have only seen the ordinary ones in use.

The operation upon the sound eye, as explained by Dr. Von Gräfe, is as follows: When a prismatic glass is held before one eye on any point of sight in the converging direction of the optic axis, the light falling upon this eye is diverted from its former course, and no longer arrives upon the macula lutea, but forms a more or less eccentric picture, according to the refracting power of the prism. From its position, this is no longer combined with the central picture on the other retina into one perception, but is perceived separately. Thus the object upon which the optic axes converge is seen double.

Theoretically, this phenomenon should be observed when a prism of very moderate power is used; but observation teaches us, on the contrary, that no diplopia follows when weak prisms are employed, especially if the base be directed outwards. This might be explained in two ways. Either the picture on one retina is suppressed, or the eye which sees through the prism takes a new position, which is not perceived by the observer, so that the picture is not formed eccentrically, but falls, like that of the other eye, upon the macula lutea. The improbability of the first supposition at once appears from the fact that no diplopia is produced by weak prisms, while more powerful ones produce it at once, and the greater the eccentric position of the picture the more easily it would be suppressed. The truth of the second explanation is established by a more exact observation of the position of the eyes. On applying the prism we see the optic axes deviate from their former position and return to it as the prism is removed. At the moment of removal the object is seen double, because both axes are not directed upon it. Thus, in order to prevent diplopia, an involuntary strabismus occurs, and we can produce this in any direction by corresponding positions of the prism, but most decidedly so inwards, less so outwards, much less so downwards, and least of all upwards. We can also produce strabismus in this manner in diagonal directions.

It follows that, by the use of prismatic glasses, we have the power of altering the tension of any given muscle of one eye without producing any alteration in the other. This is the peculiar advantage which none of the ordinary orthopædic means formerly employed possessed. On the contrary, the result hoped for from their employment was not only frequently frustrated by the movements of association of the two eyes, but sometimes, as in cases of recent muscular paralysis, an effect directly the reverse of that desired was brought about.

The increased contraction called for from the relaxed muscle by the use of prismatic glasses is the source of their curative power. For example, in a case of convergent strabismus with diplopia, a prism, with its base directed outwards, alters the position of the eccentric picture on the retina of the squinting eye so greatly, and brings it so near the macula lutea, that single vision follows any voluntary power conveyed to the abductor muscle. Consequently, the angle of the squint is somewhat diminished. As it becomes less, and the power of the abductor increases, prisms must be used gradually diminishing in power, until at last a perfectly accurate corresponding position of the eyes is attained at all distances—in other words, the squint is perfectly cured. I have seen patients of Dr. Von Gräfe's, who were thus completely cured in about six weeks, commencing with strong glasses of the numbers from 15 to 20, and gradually wearing them less and less powerful. They are principally applicable in young persons, who squint but slightly; and in cases of diplopia biocularis, where the abnormal position of one eye is only observed when an object some feet distant is regarded, they are the only certain means of cure.

In more marked degrees of strabismus the muscle must be divided, because the use of strong prisms, and the efforts of the patient to avoid diplopia, become very troublesome; and, if the union of the two images causes too great an effort, an effect is produced exactly the opposite of that desired; for if the diplopia cannot be removed, the double images separate still farther from each other, because, when distant, they are not so intolerable as when near.

In many cases after operations for the cure of strabismus by division of the muscle in one or both eyes, although great improvement follows the cure is not perfect. Some degree of squint still persists in one eye, and probably some diplopia, when objects at certain distances from the eye are attentively regarded. In such cases, the prismatic glasses suffice to complete the cure commenced by the operation. I saw several instances in which this proved to be the case in the practice of Dr. Von Gräfe.

I have patients under my care at present who are wearing these spectacles, and I shall take a future opportunity of making the results known. Messrs. Watkins and Hill, opticians, of Charing-cross, have had the glasses ground and fitted for me, and make them at any angle which may be required. Messrs. Bland and Long, of Fleet-street, also make them.

NOTE.—Of three patients who have used the glasses, two have been greatly improved, and still go on favourably. In the third, where the power of the squinting eye was very much less than that of the opposite one, the strongest prism which could be worn without producing diplopia was ineffectual, and I had to recur to the old method of exercising the squinting eye while the other was covered. I do not use an ordinary shade or bandage as a covering, but have an India-rubber ring, which fits the orbit, covered on the outside with silk, and fastened by a ribbon. This allows free motion of the eye and eyelids, while the light is perfectly excluded.—*Med. Times and Gaz.* Aug. 27, 1853.

65. *New Method of operating for Strabismus by a temporary Ligature.*—M. TAVIGNOR sent in a memoir, the object of which is to explain a new method of operating for strabismus. This new operation is founded on the following idea, that, instead of lengthening a muscle supposed to be too short, you must shorten a muscle in reality too long. Instead of leaving the eye to oscillate with difficulty, and sometimes sluggishly, between two muscles, one of which is mutilated by a section, and the other remains always more or less powerless, my method of operating, says the author, attacks the longest muscle, and not only shortens it by a sufficient length to equal that of its antagonist, but it furthermore acts by increasing its physiological contraction.

First Operation.—The longest muscle—that is to say, that one which is opposed to the deviation being exposed in the ordinary manner for strabotomy, the operator proceeds in the following manner: A blunt-hook, with an eye at its extremity, is passed underneath the muscle, so as by lifting it up to detach it from the globe of the eye. The hook is then carried forward, so that its concavity embraces the muscle at a little distance from its aponeurotic expansion. A thread of silk is then passed through the eye of the hook, then the hook itself is brought towards the operator, leaving the ligature under the muscle. By a double twist of the ends of the thread on one another, a simple, yet very resisting, knot is obtained. There only then remains to finish the operation, to tighten the knot, and cut away one of the ends of the ligature. The other end is brought to the corresponding angle of the eye and fixed to a spot on the circumference of the orbit.

The first effect of this ligature is to render the lateral fibres of the muscles more central, and thus to bring about a shortening of this organ. The second effect is to develop an adhesive inflammation, which not only fixes permanently the abnormal juxtaposition of the muscular fibres, but also establishes adhesion between the muscle and subjacent sclerotic membrane.

The ligature not being intended to produce division of the muscle, must consequently be only temporary. Towards the end of the second, or beginning of the third day, it can be easily taken off by means of gentle traction carefully applied to the end which remains.

This first operation may not in all cases produce the effect which we have described. Very severe strabismus will no doubt prove refractory. It is at least with this idea that I devised a way of making it more efficacious.

Second Operation.—The hook having been passed under the muscle, as in the preceding case, the ligature is passed, not directly under the muscle, but under the hook, so as to embrace the muscular expansion.